

Message

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Sent: 12/14/2010 2:46:15 PM
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BCC: Mugdan.Walter@epamail.epa.gov
Subject: Mass removal estimates

Ed,

There is increased interest among senior EPA officials in the estimates of mass removal. I therefore want to document my conversation yesterday with John Connolly and John Haggard.

John C. explained how he calculated the 97% mass removal estimate that GE has publicly stated is associated with its proposed cleanup project.

Specifically, this estimate was made for GE's Dec. 8 proposal that $X = 12.5\%$, and it was compared to EPA's previous suggestion that X might be set at 10% . Connolly used the 20 simulated CUs that he created from a selection of 115 Phase 1 data points. (These simulations are alluded to in the document that GE provided to EPA on Dec. 6 describing what was then its proposal of $X = 18\%$.) He determined that the average surface concentration of the nodes that could be backfilled was 1.3 ppm Tri+, and the average surface concentration of nodes that had to be capped was 20 ppm Tri+. He then created a weighted average for Phase 2, assuming that 12.5% of the area would be capped over sediments with a surface concentration of 20 ppm, and 87.5% of the area would be backfilled over sediments with a surface concentration of 20 ppm, yielding a weighted overall average surface concentration of 5 ppm. He then assumed that the 440 acres to be dredged in Phase 2 had this 5 ppm concentration, but only in the top 6" after dredging. He then used the GE bulk density conversion factor to determine the mass of PCBs contained in this 6" layer. He then converted from Tri+ to Total PCBs by multiplying by three. He then compared that product to GE's estimate of "130-something thousand" kilograms available to be removed in Phase 2. (He didn't have the exact amount when I spoke to him; it is my understanding that the number is based on GE's estimate of 144,000 kg in the entire dredge footprint, less the amount in Phase 1.) This yielded the 97% mass removal estimate. He then did the same series of calculations assuming $X = 10\%$, which resulted in a 98% mass removal estimate. On Dec. 8 and again on subsequent days GE asserted in discussions with EPA that the 1% difference amounts to 1,440 kg difference. Presumably this was derived by applying the 1% to the overall GE estimate of 144,000 kg.

Because of the increased interest in an estimate of mass removal, I'd like to hear this morning how we have made (or would make) an estimate of this sort, and what we think of GE's approach.

- Walter